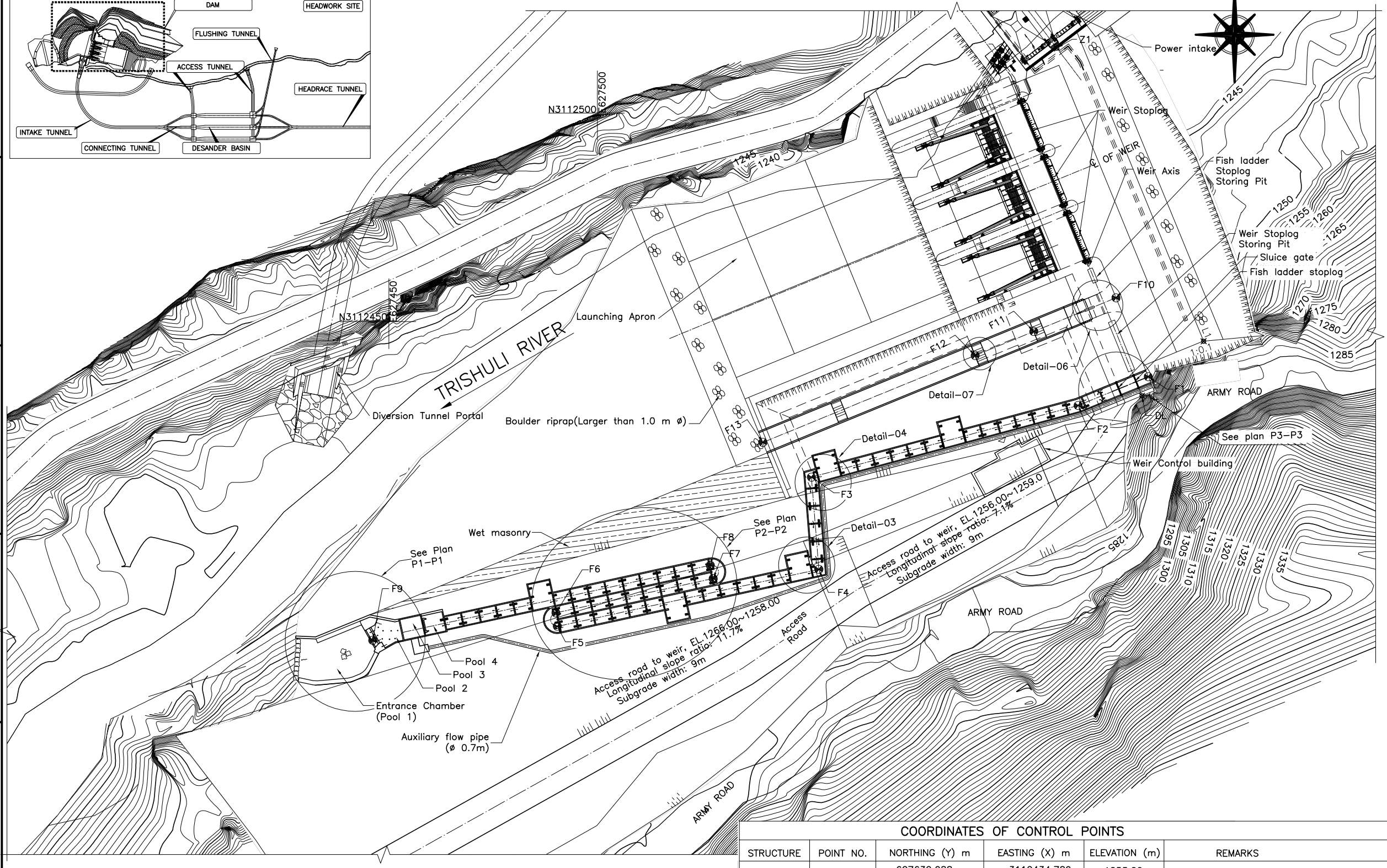
KEY PLAN



FISH LADDER LAYOUT PLAN

Scale 1:1000

COORDINATES OF CONTROL POINTS

STRUCTURE	POINT NO.	NORTHING (Y) m	EASTING (X) m	ELEVATION (m)	REMARKS
Upstream Fish ladder	F1	627632.088	3112434.789	1253.20	Exit of Upstream Fish ladder
	F2	627615.266	3112429.901	1252.290	First bend of Upstream Fish ladder
	F3	627551.316	3112412.713	1248.089	Second bend of Upstream Fish ladder
	F4	627553.106	3112390.599	1246.536	Third bend of Upstream Fish ladder
	F5	627490.753	3112376.992	1242.140	Start of fourth bend of Upstream Fish ladder
	F6	627490.060	3112380.167	1241.850	End of fourth bend of Upstream Fish ladder
	F7	627527.767	3112388.396	1239.138	Start of fifth bend of Upstream Fish ladder
	F8	627527.062	3112391.568	1238.850	End of fifth bend of Upstream Fish ladder
	F9	627446.140	3112373.593	1234.205	Entrance of Upstream Fish ladder
Downstream Fish ladder	F10	627624.336	3112455.715	1250.100	Entrance of downstream fish ladder
	F11	627604.612	3112447.642	1248.850	First drop of downstream fish ladder
	F12	627590.559	3112441.881	1241.850	Second drop of downstream fish ladder
	F13	627539.663	3112421.035	1235.000	Exit of downstream fish ladder

NOTE

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3. The flood wall arrangement provided adjacent to entrance pool of upstream fish ladder(at the left bank of river) is only for reference. the actual size of the wall shall be finalized after design.
4. The arrangement of the auxiliary flow pipe and anchor block is subjected to change as per the structural design of the fish ladder.
5. The access road to the weir, location of the weir control building and observation room shall be finalized after the approval of the upstream and downstream fish ladder arrangement.
6. Hydro mechanical structures shown in drawing are only for reference.

m10 0 10 20 30 40m

Scale 1:1000

REFERENCE DRAWINGS

UT1-C-020-CVL-DG-44004-0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

FOR INFORMATION

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DIS/DIP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli-1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE jade CONSULT

CONTRACTOR

DOOSAN Enerbility

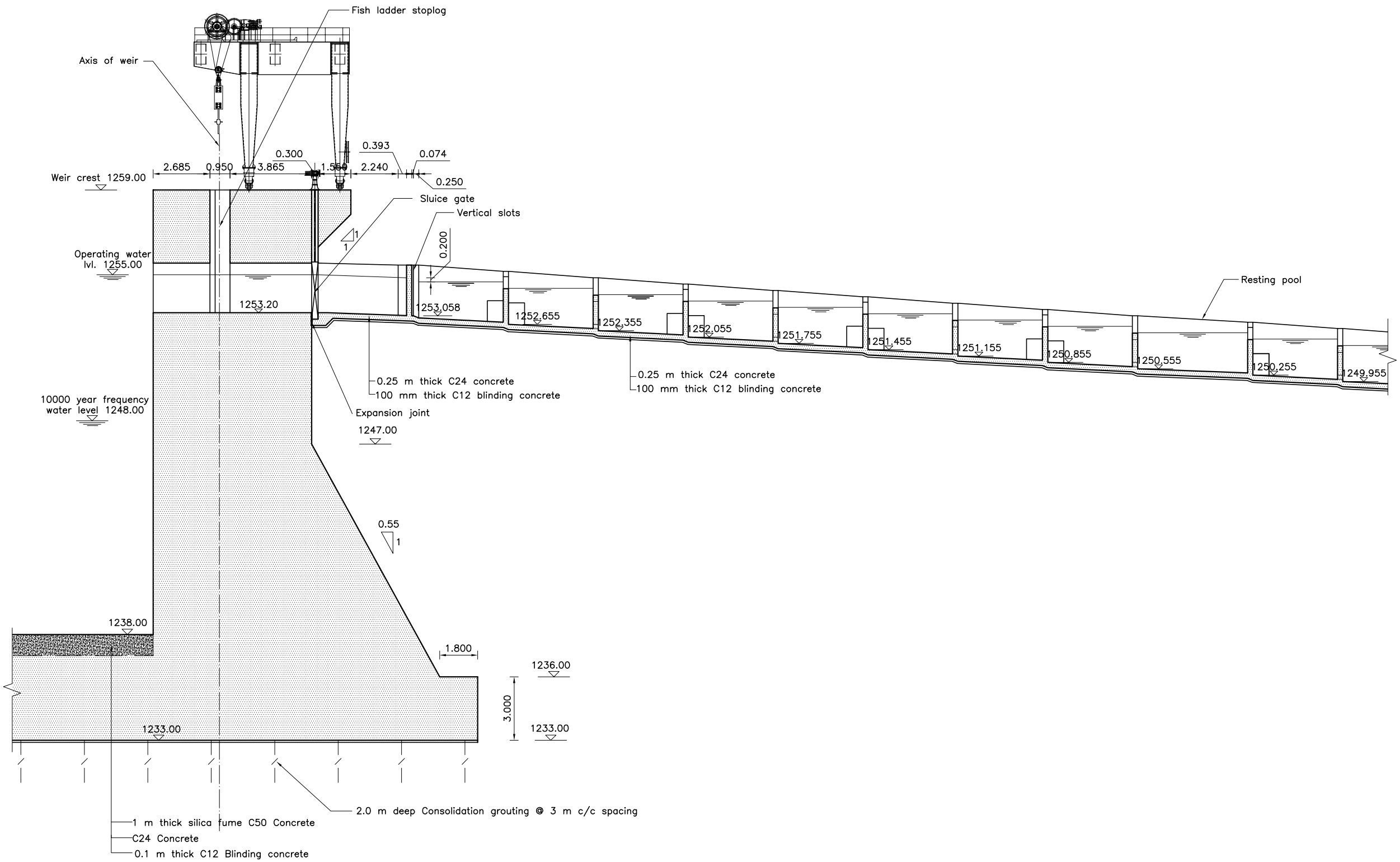
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

PLAN

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1-C-050-CVL-DG-49001-01	01 OF 16	0A

A3 (297 x 420 mm)



LONGITUDINAL PROFILE OF FISH LADDER

Scale 1:200

NOTE

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6. Hydro mechanical structures shown in drawing are only for reference.

m 2 0 2 4 6 8 m

Scale 1:200

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

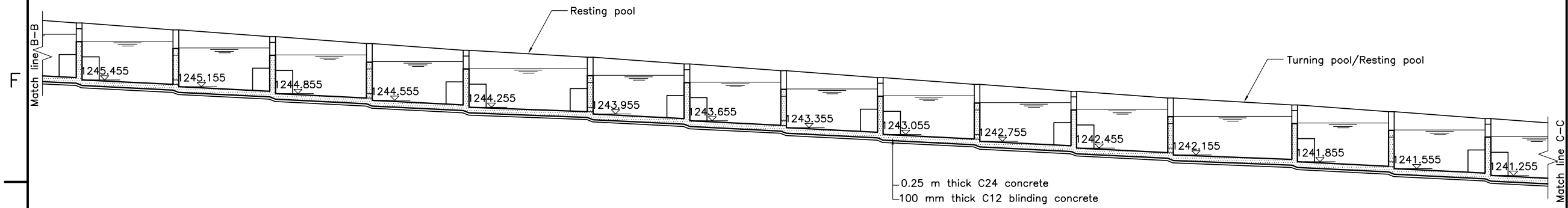
DRAWING TITLE

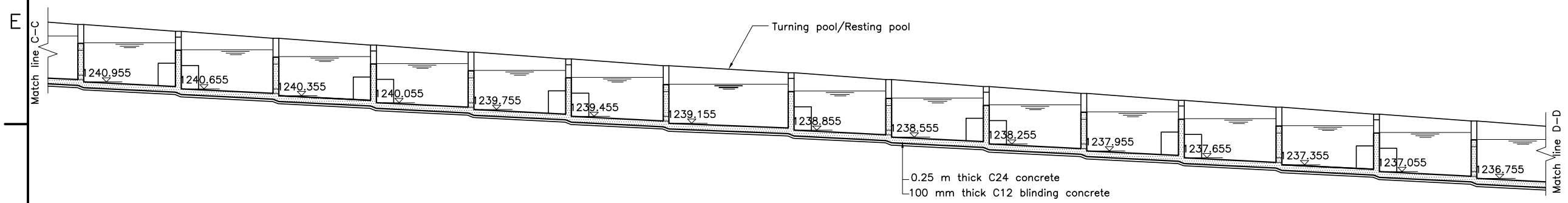
LAYOUT DRAWING OF FISH LADDER

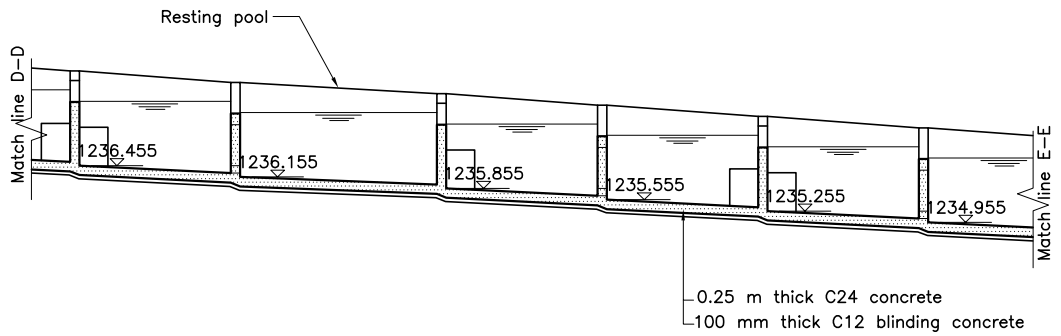
PROFILE

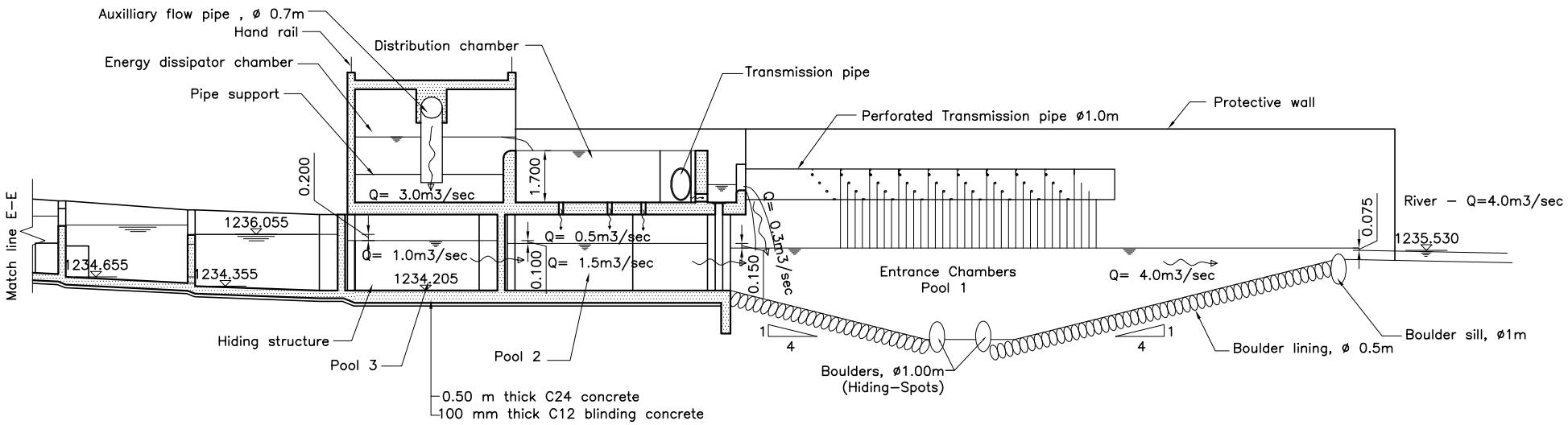
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–02	02 OF 16	0A

A3 (297 x 420 mm)









LONGITUDINAL PROFILE OF FISH LADDER

Scale 1:200

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m 2 0 2 4 6 8 m

Scale 1:200

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/ DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

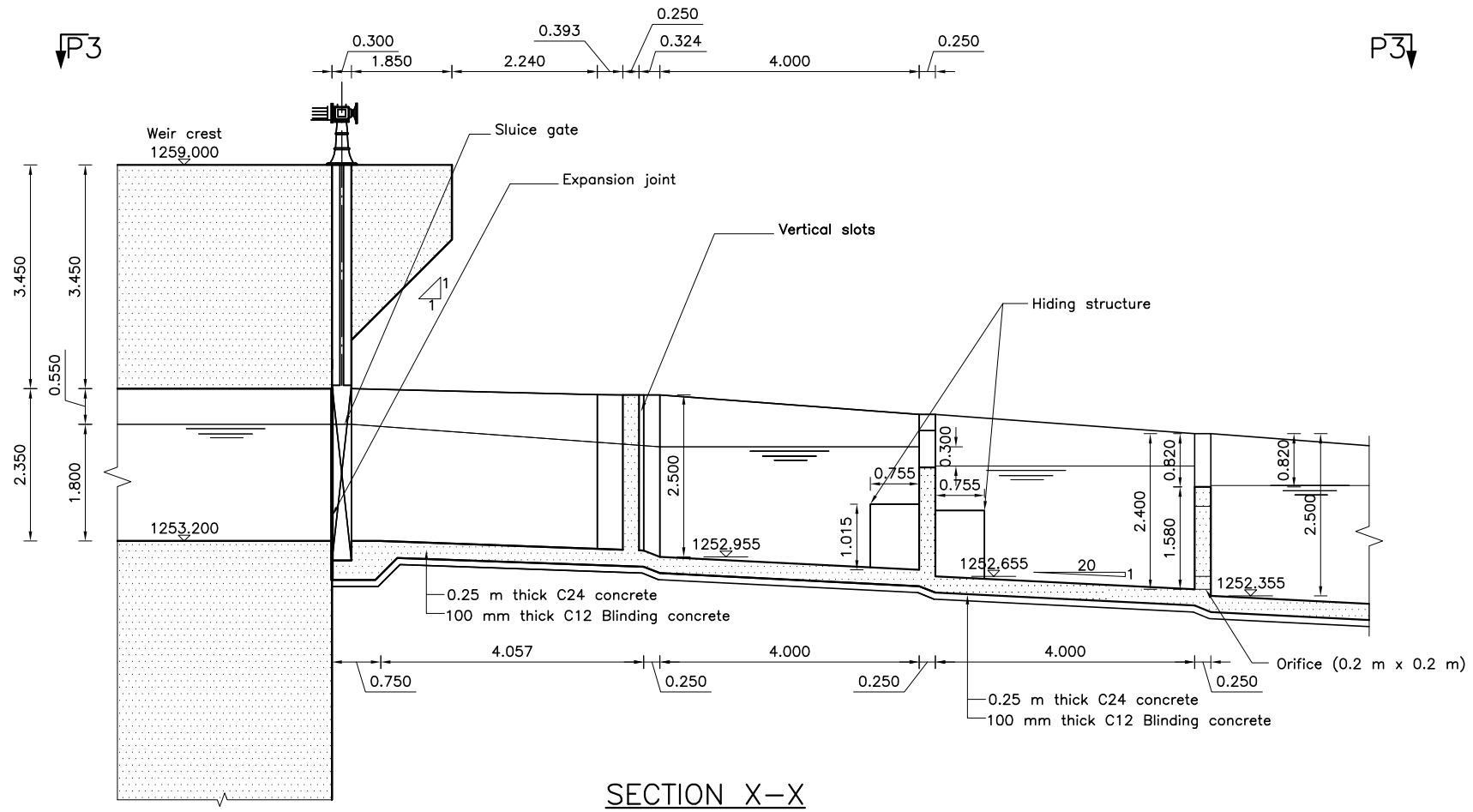
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

PROFILE

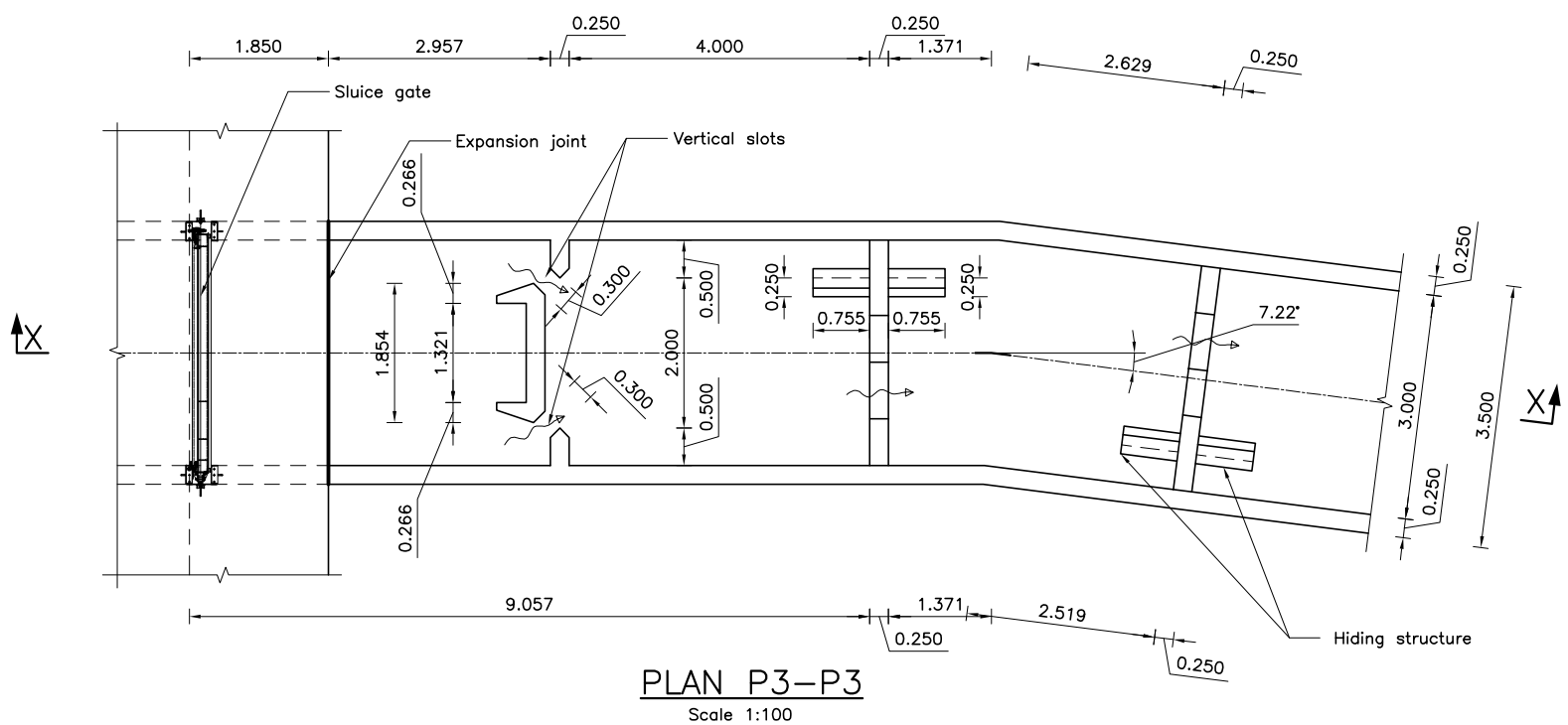
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–03	03 OF 16	0A

A3 (297 x 420 mm)



SECTION X–X

Scale 1:100



PLAN P3–P3

Scale 1:100

NOTE

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m 1 0 1 2 3 4 m

Scale 1:100

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE · jade CONSULT

CONTRACTOR

DOOSAN Enerbility

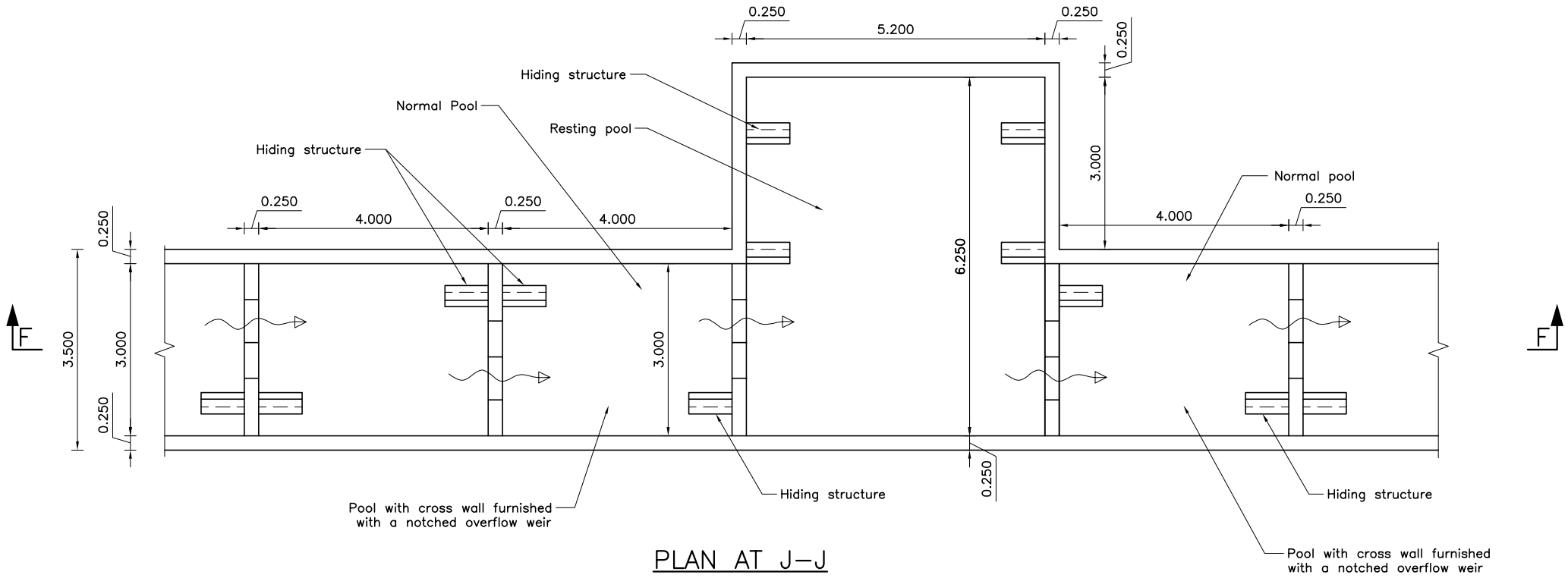
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

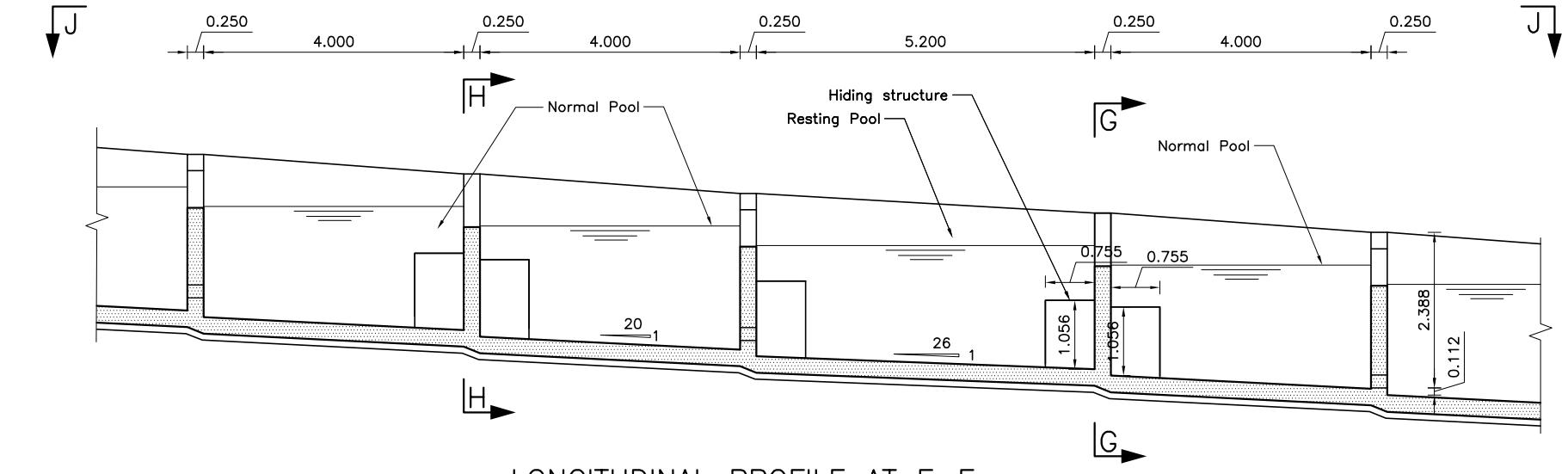
PLAN AND SECTION

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–04	04 OF 16	0A

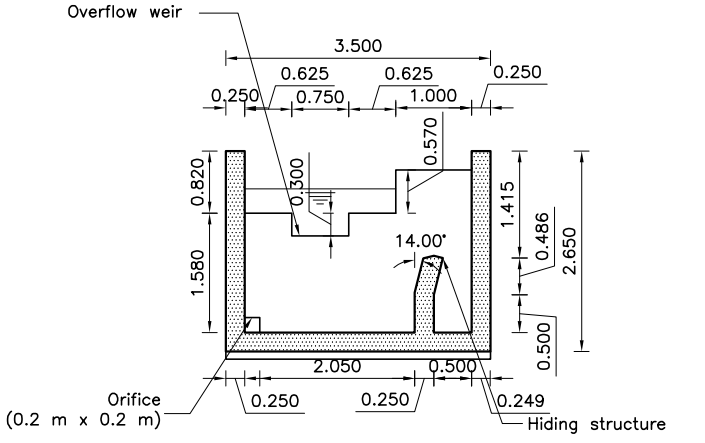
A3 (297 x 420 mm)



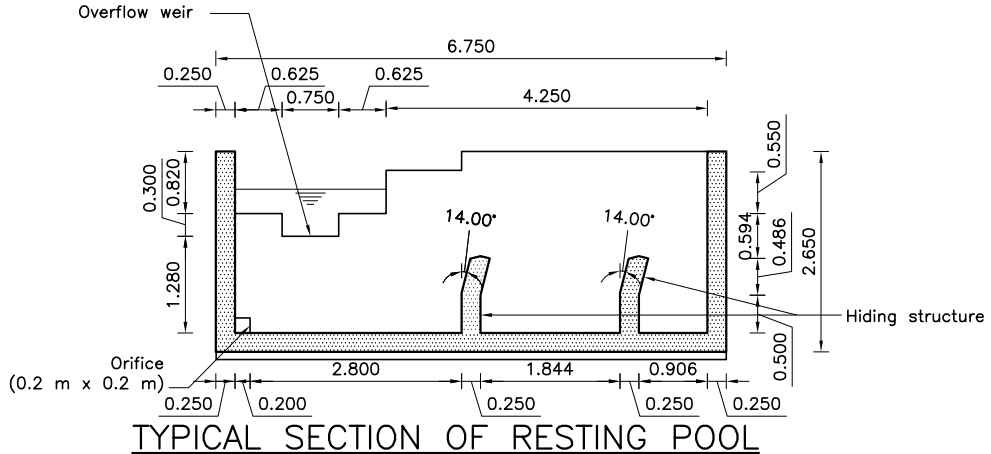
PLAN AT J–J
TYPICAL PLAN OF NORMAL AND RESTING POOL
Scale 1:100



LONGITUDINAL PROFILE AT F–F
Scale 1:100



TYPICAL SECTION OF NORMAL POOL
(H–H)
Scale 1:100



TYPICAL SECTION OF RESTING POOL
(G–G)
Scale 1:100

NOTE

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m 1 0 1 2 3 4 m

Scale 1:100

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

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- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE · jade CONSULT

CONTRACTOR

DOOSAN Enerbility

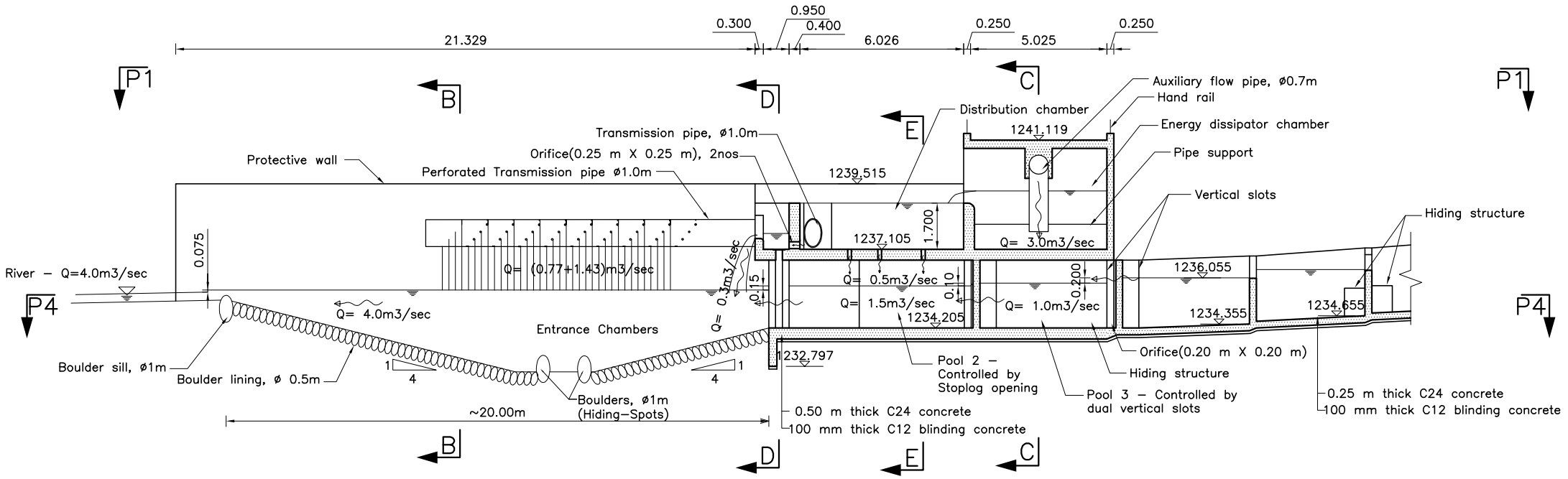
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

PLAN PROFILE AND SECTIONS

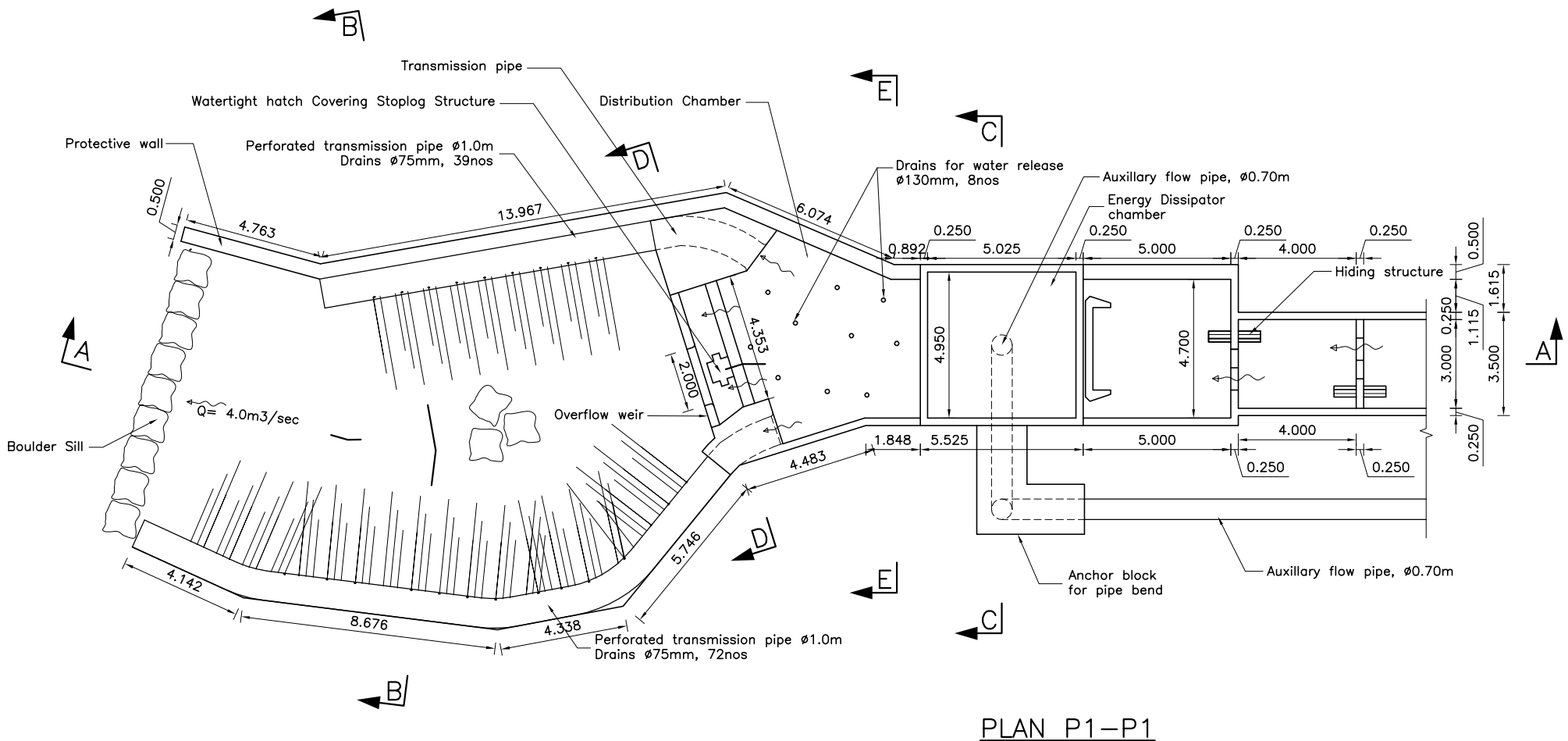
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–05	05 OF 16	0A

A3 (297 x 420 mm)



LONGITUDINAL SECTION AT A–A

Scale 1:200



PLAN P1–P1
ENTRANCE OF FISH LADDER
DOWNSTREAM

Scale 1:200

NOTE

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m 2 0 2 4 8 10m

Scale 1:200

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

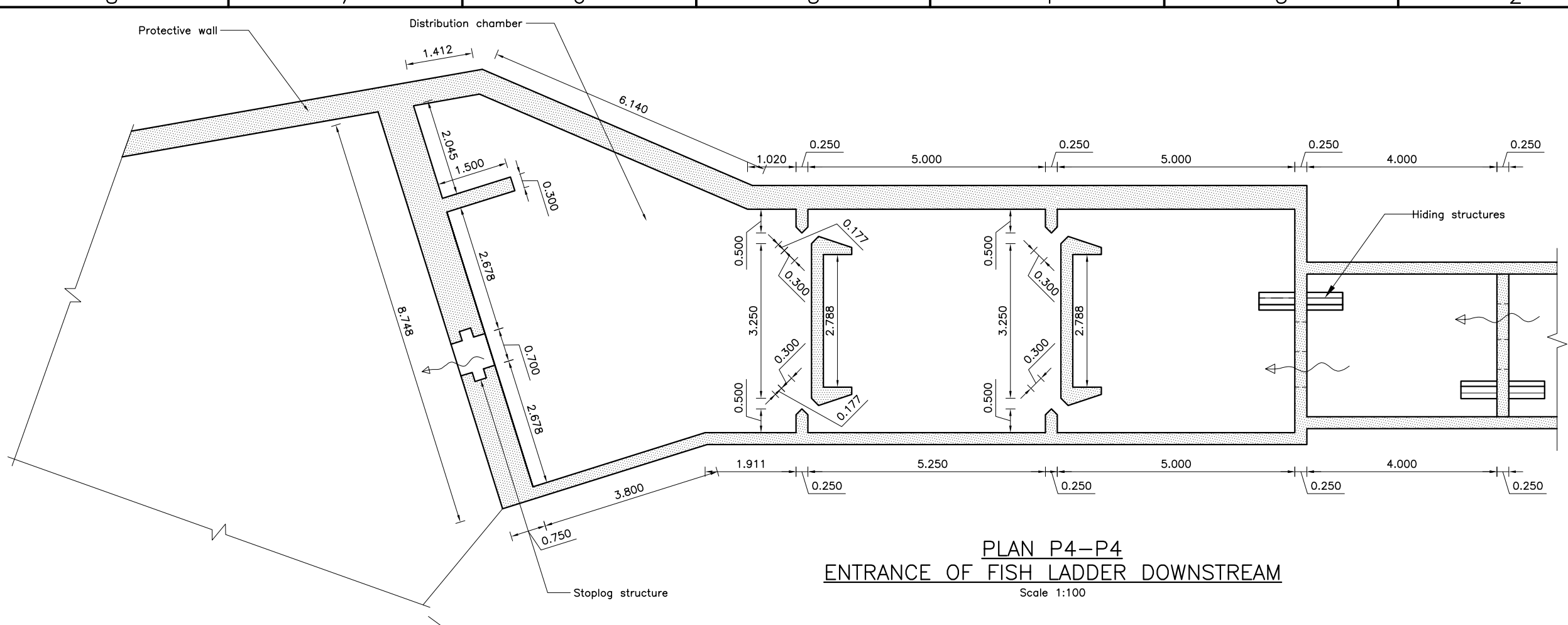
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

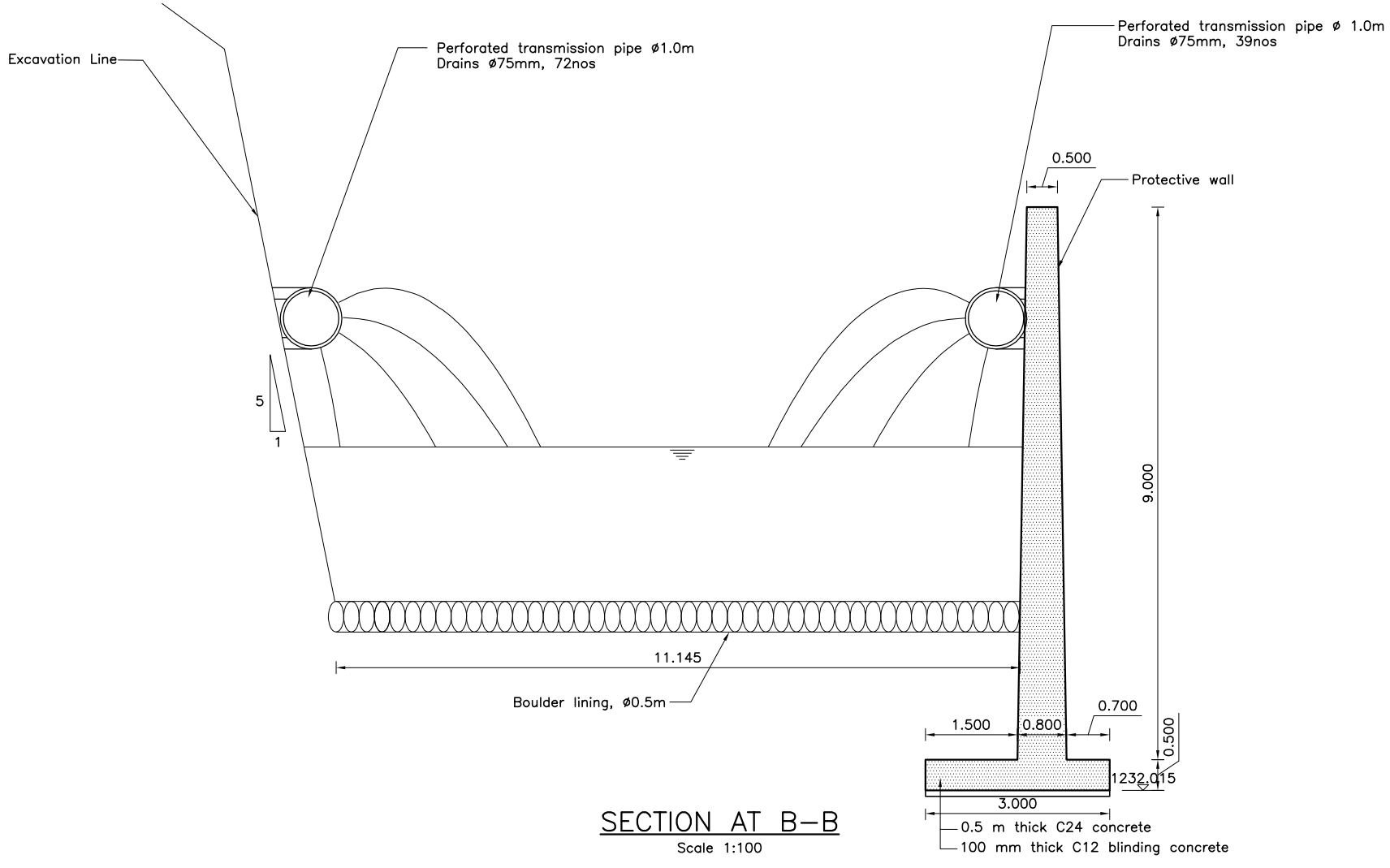
PLAN AND SECTION

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–06	06 OF 16	0B

A3 (297 x 420 mm)



PLAN P4–P4
ENTRANCE OF FISH LADDER DOWNSTREAM
Scale 1:100



SECTION AT B–B
Scale 1:100

NOTE

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6. Hydro mechanical structures shown in drawing are only for reference.

m 1 0 1 2 3 4 m

Scale 1:100

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
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- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DIS/DIP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

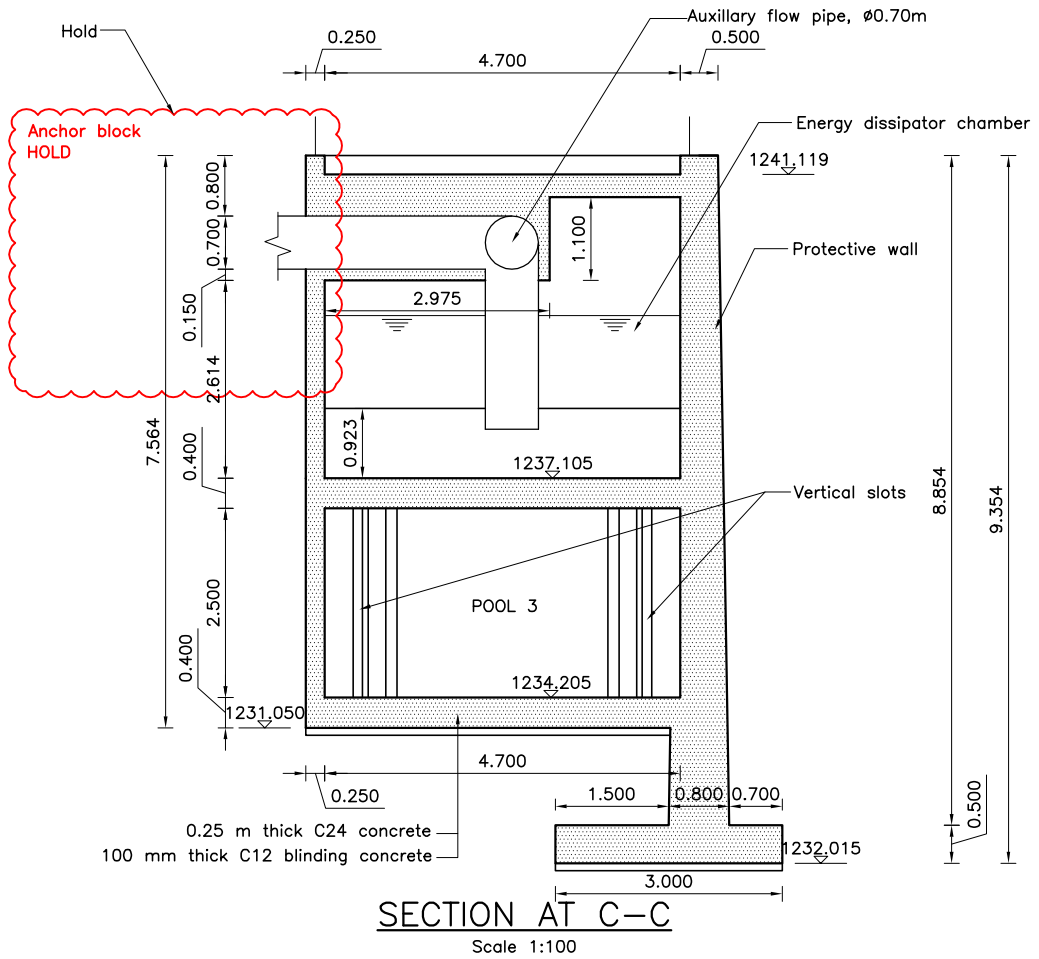
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

DETAILS

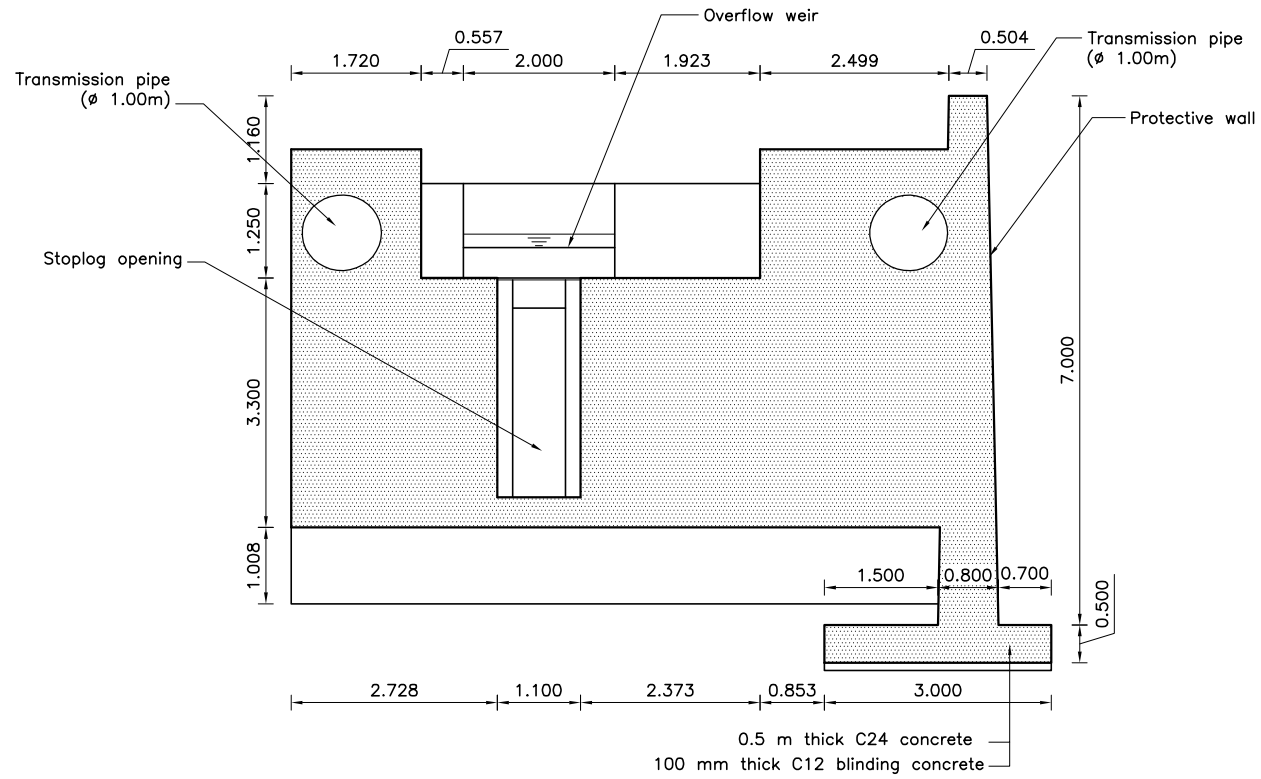
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–07	07 OF 16	0B

A3 (297 x 420 mm)



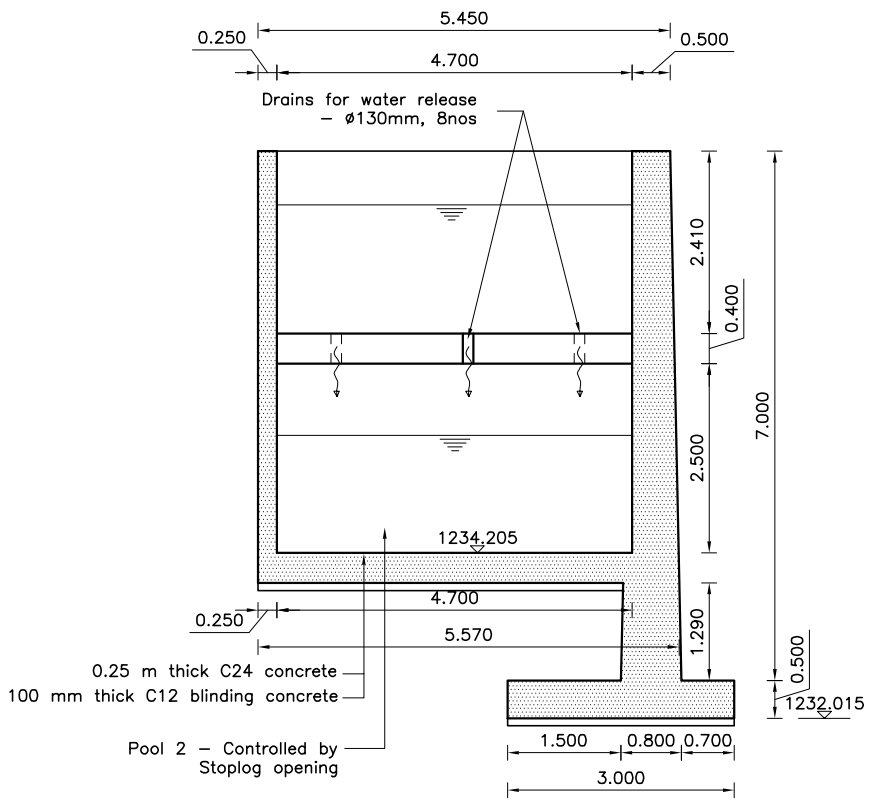
SECTION AT C–C

Scale 1:100



SECTION AT D–D

Scale 1:100



SECTION AT E–E

Scale 1:100

NOTE

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6. Hydro mechanical structures shown in drawing are only for reference.

m 1 0 1 2 3 4 m

Scale 1:100

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
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- Elevation lines
- C30 Concrete
- C50 Concrete
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- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

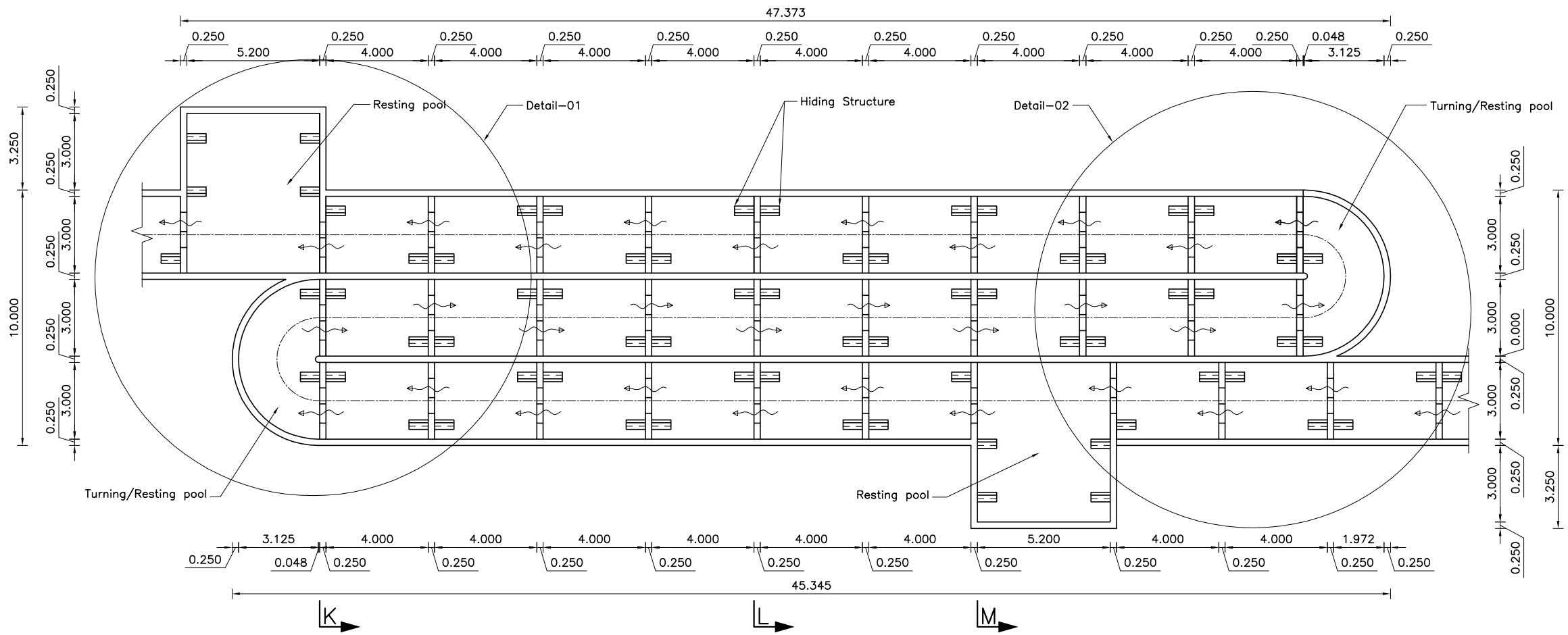
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

SECTIONS

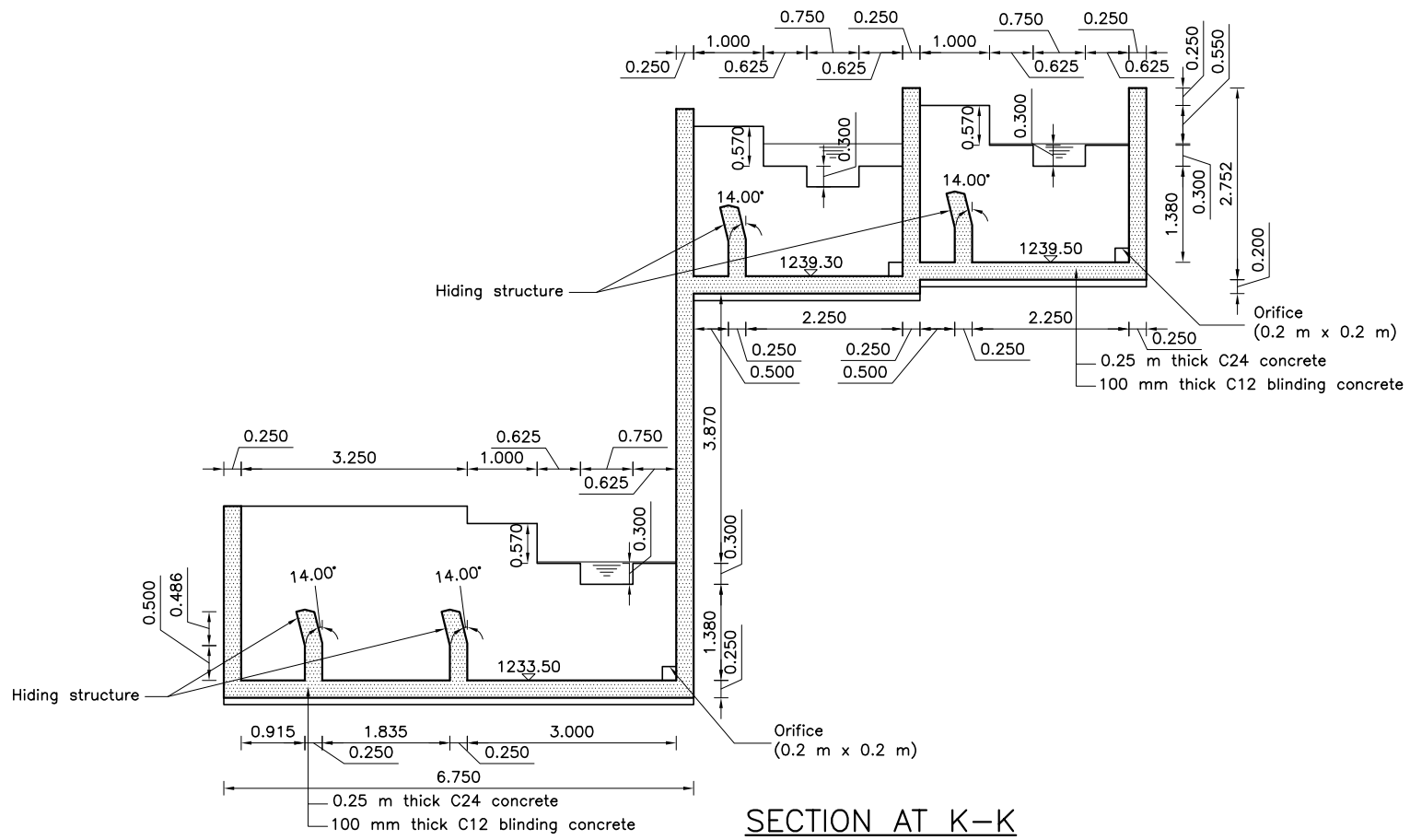
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–08	08 OF 16	0A

A3 (297 x 420 mm)



PLAN P2–P2 (SERPENTINE PART)

Scale 1:200



SECTION AT K–K

Scale 1:100

NOTE

1. All dimensions are in m, levels are in m above msl unless otherwise mentioned.
2. The size of the upstream and downstream fish ladders are based on the hydraulic sizing. The actual thickness of the walls and base slab shall be finalized after the structural design.
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5. The access road to the weir, location of the weir control building and observation room shall be finalized after the approval of the upstream and downstream fish ladder arrangement.
6. Hydro mechanical structures shown in drawing are only for reference.

m1 0 1 2 3 4 m

Scale 1:100

m2 0 2 4 6 8 m

Scale 1:200

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

FOR INFORMATION

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE · jade CONSULT

CONTRACTOR

DOOSAN Enerbility

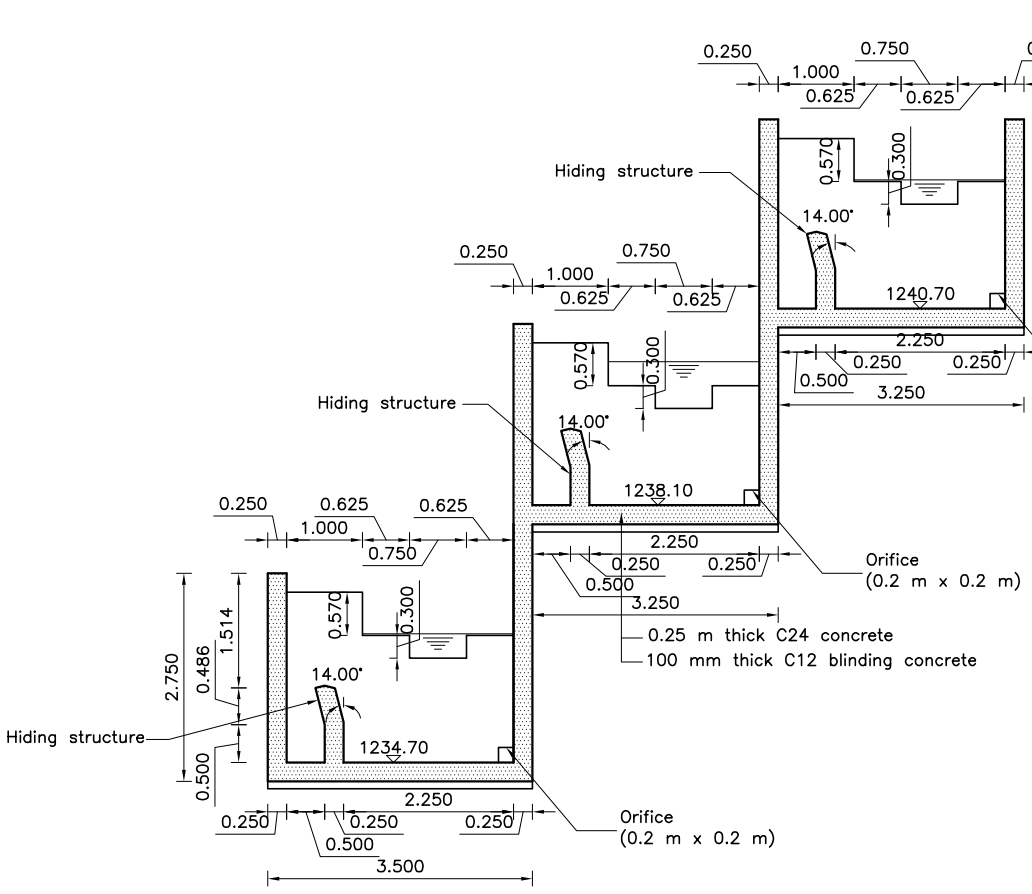
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

PLAN AND SECTION

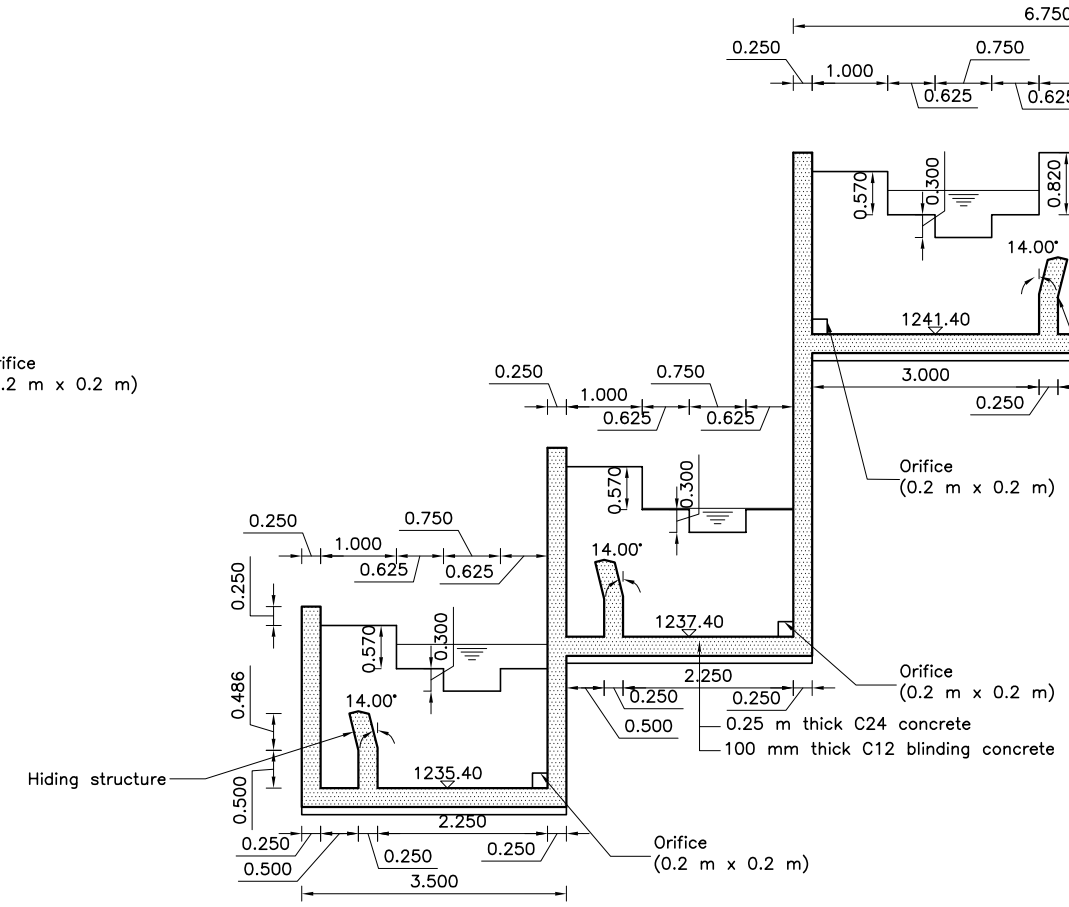
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–09	09 OF 16	0A

A3 (297 x 420 mm)



SECTION AT L–L

Scale 1:100



SECTION AT M–M

Scale 1:100

NOTE

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6. Hydro mechanical structures shown in drawing are only for reference.

m 1 0 1 2 3 4 m

Scale 1:100

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC NEPAL WATER AND ENERGY DEVELOPMENT CO. PVT. LTD.

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

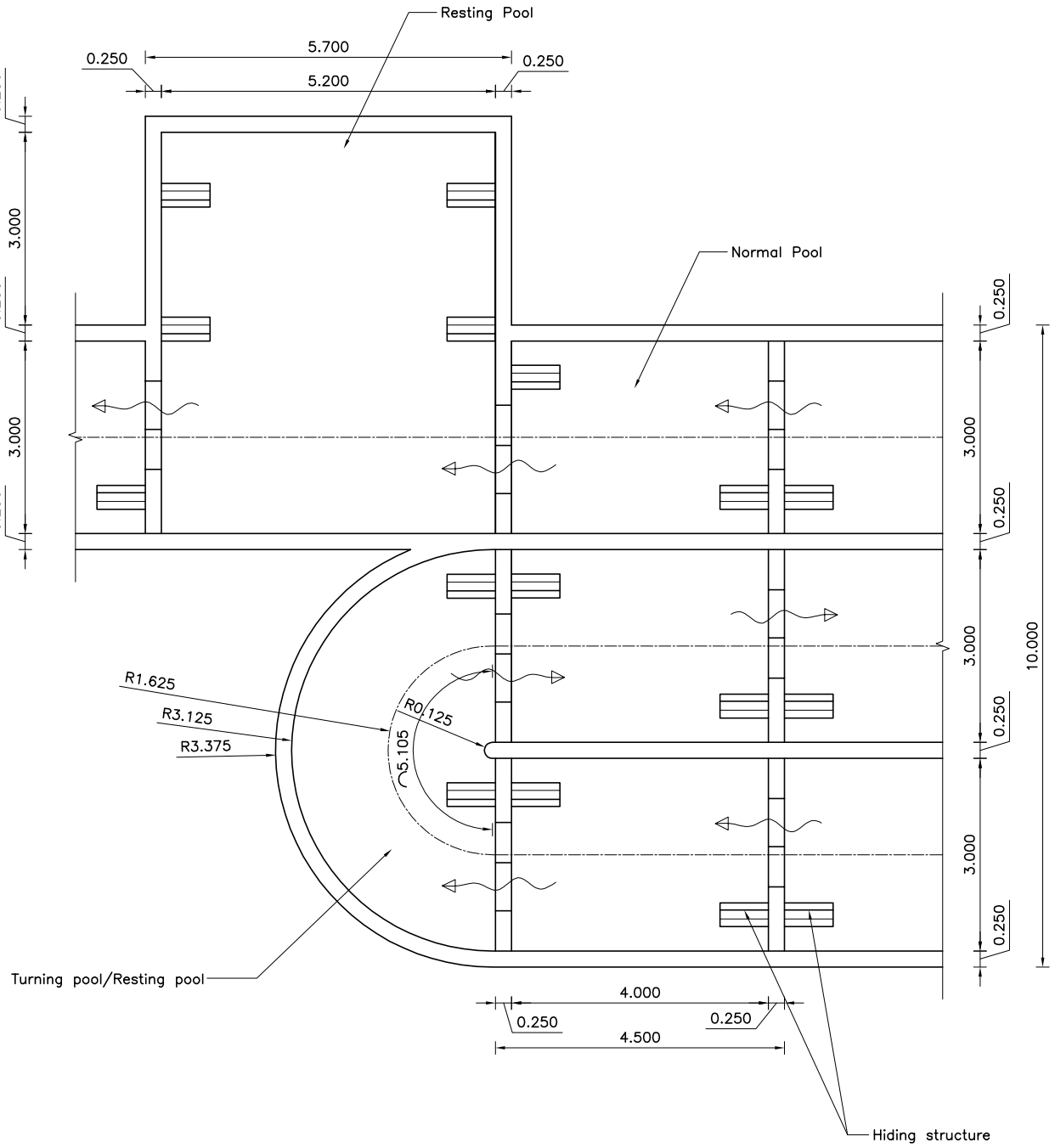
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

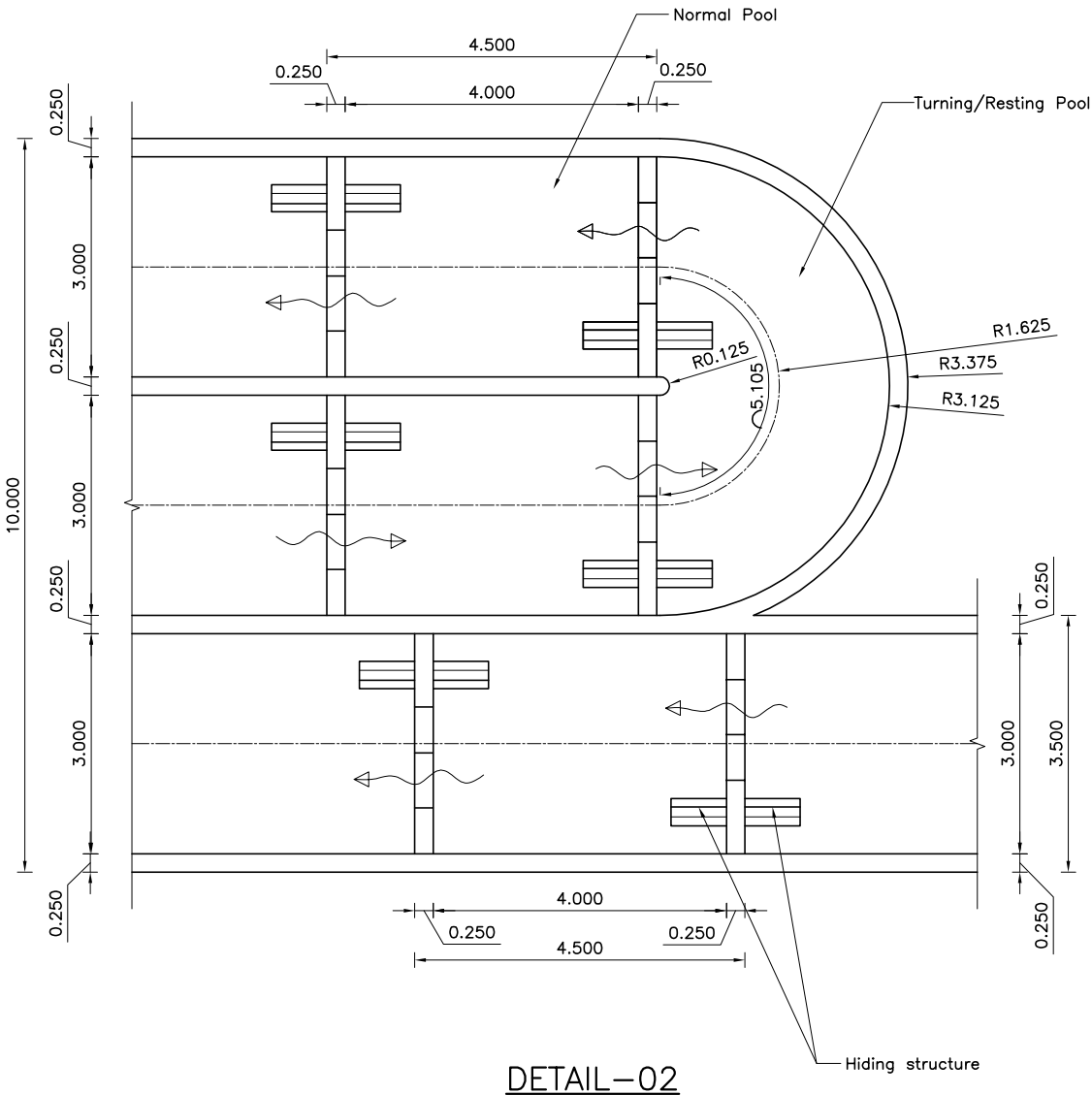
SECTIONS

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–10	10 OF 16	0A

A3 (297 x 420 mm)



DETAIL–01
Scale 1:100



DETAIL–02
Scale 1:100

NOTE

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5. The access road to the weir, location of the weir control building and observation room shall be finalized after the approval of the upstream and downstream fish ladder arrangement.
6. Hydro mechanical structures shown in drawing are only for reference.

m 1 0 1 2 3 4 m

Scale 1:100

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

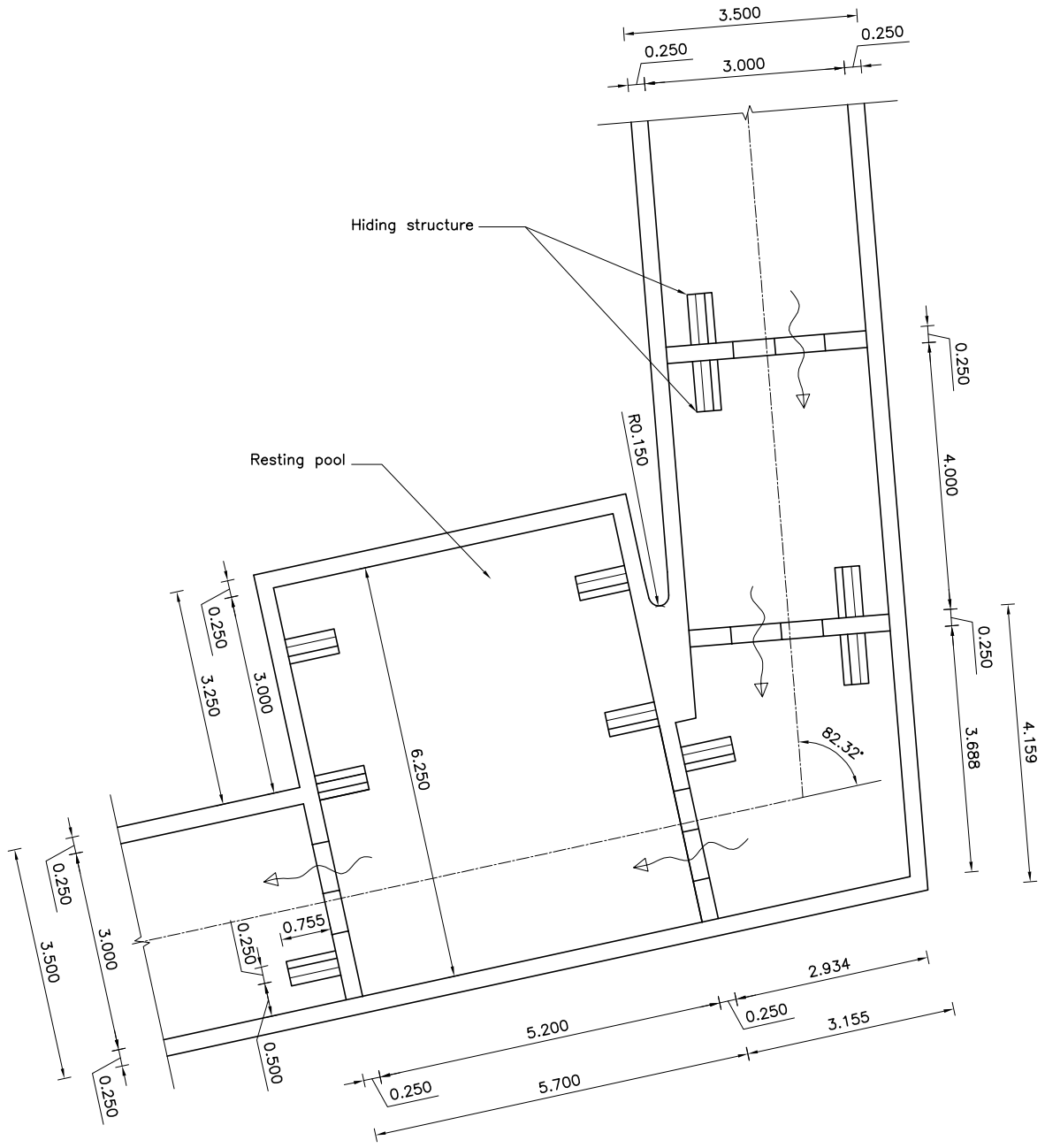
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

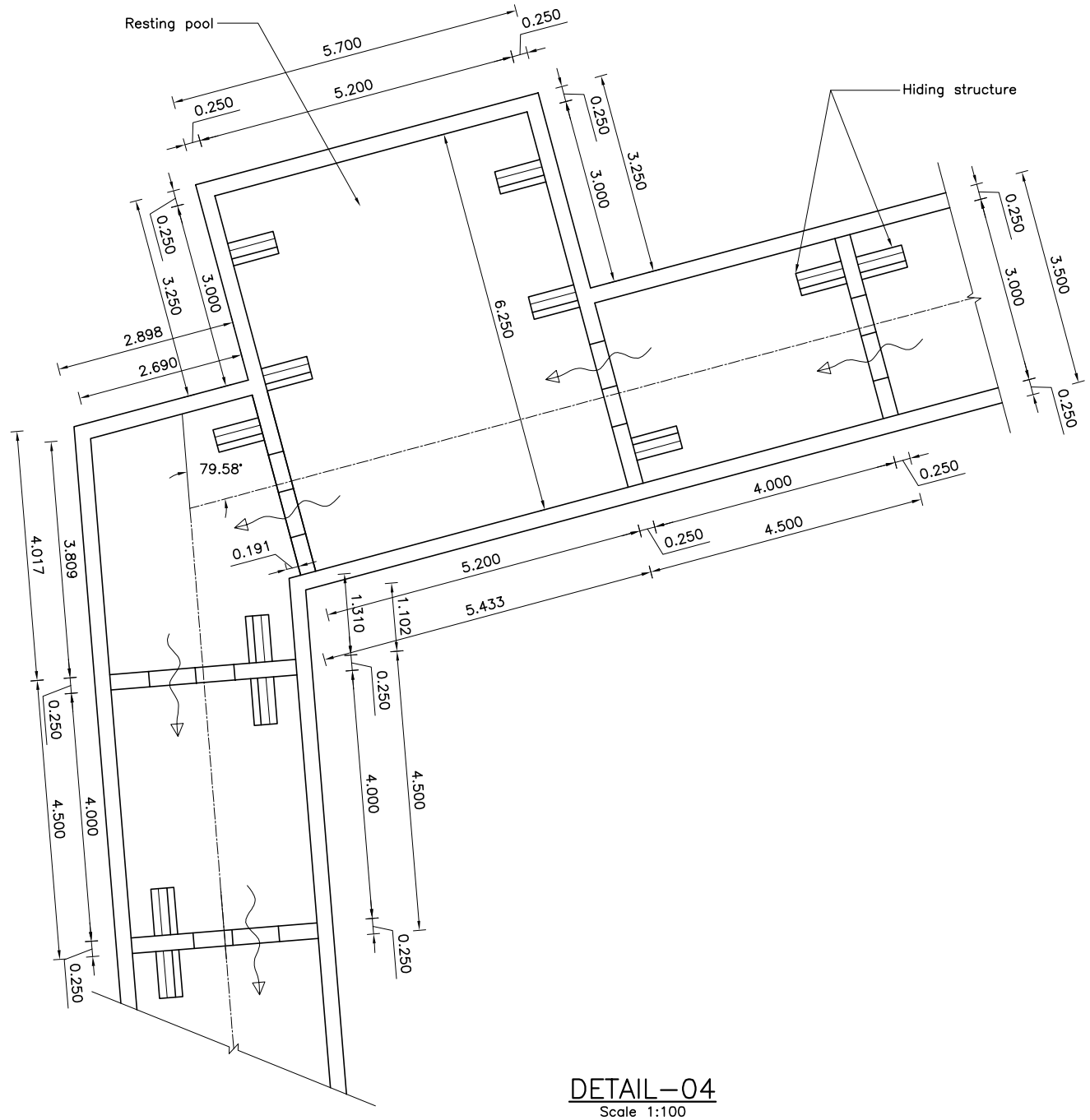
DETAILS

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–11	11 OF 16	0A

A3 (297 x 420 mm)



DETAIL–03
Scale 1:100



DETAIL–04
Scale 1:100

NOTE

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5. The access road to the weir, location of the weir control building and observation room shall be finalized after the approval of the upstream and downstream fish ladder arrangement.
6. Hydro mechanical structures shown in drawing are only for reference.

m 1 0 1 2 3 4 m

Scale 1:100

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DIS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE

jade CONSULT

CONTRACTOR

DOOSAN Enerbility

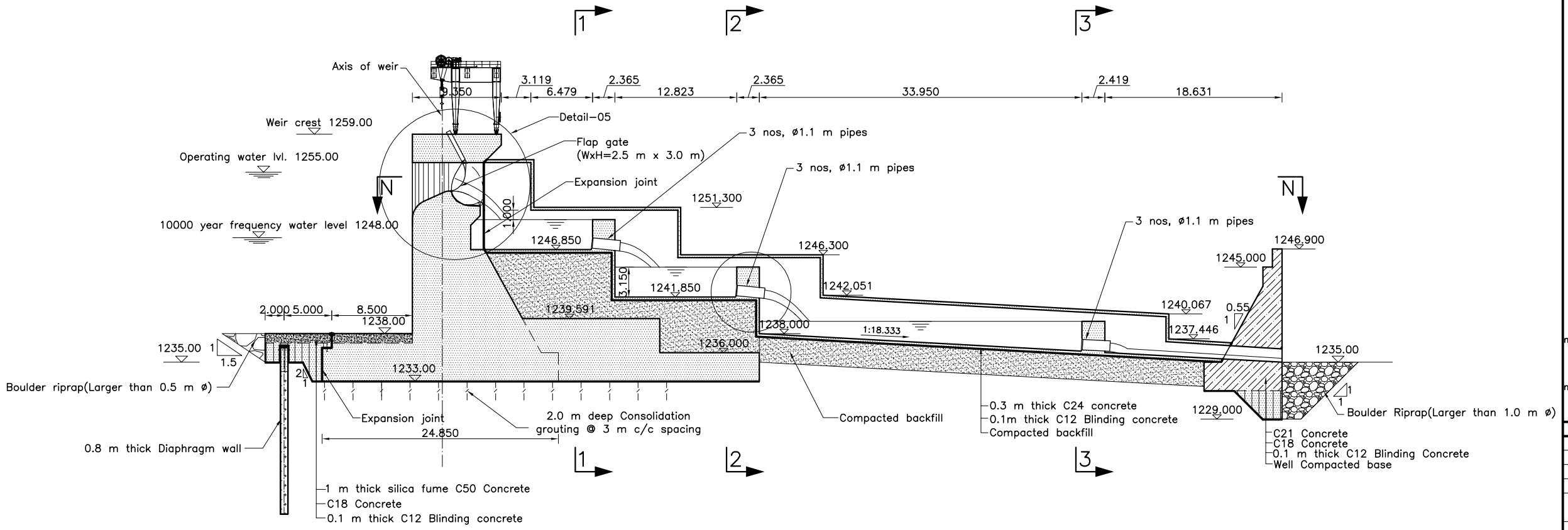
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

DETAILS

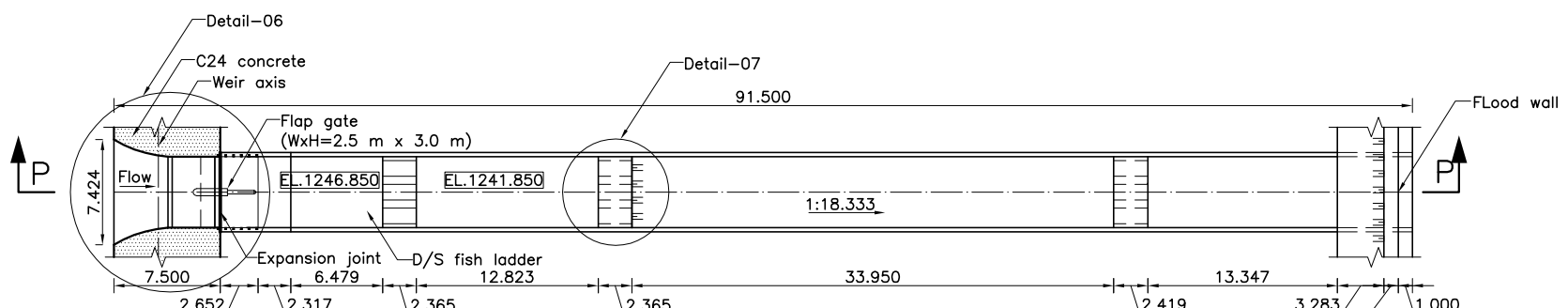
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–12	12 OF 16	0A

A3 (297 x 420 mm)



LONGITUDINAL PROFILE P–P OF D/S FISH LADDER

Scale 1:500



PLAN N–N

Scale 1:500

NOTE

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6. Hydro mechanical structures shown in drawing are only for reference.

m 5 0 5 10 15 20m

Scale=1:500

m 2 0 2 4 6 8 m

Scale=1:200

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

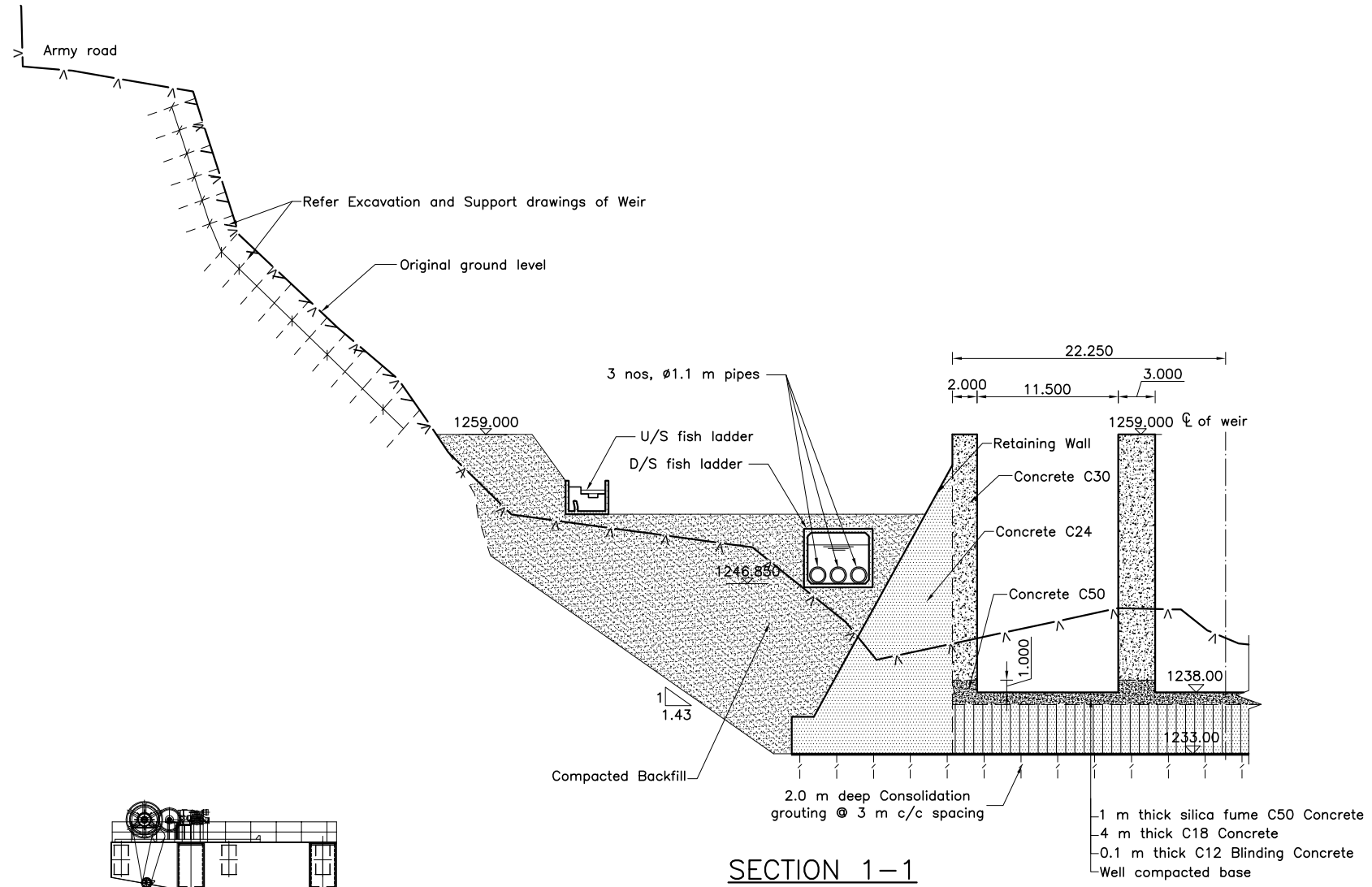
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

PLAN AND PROFILE

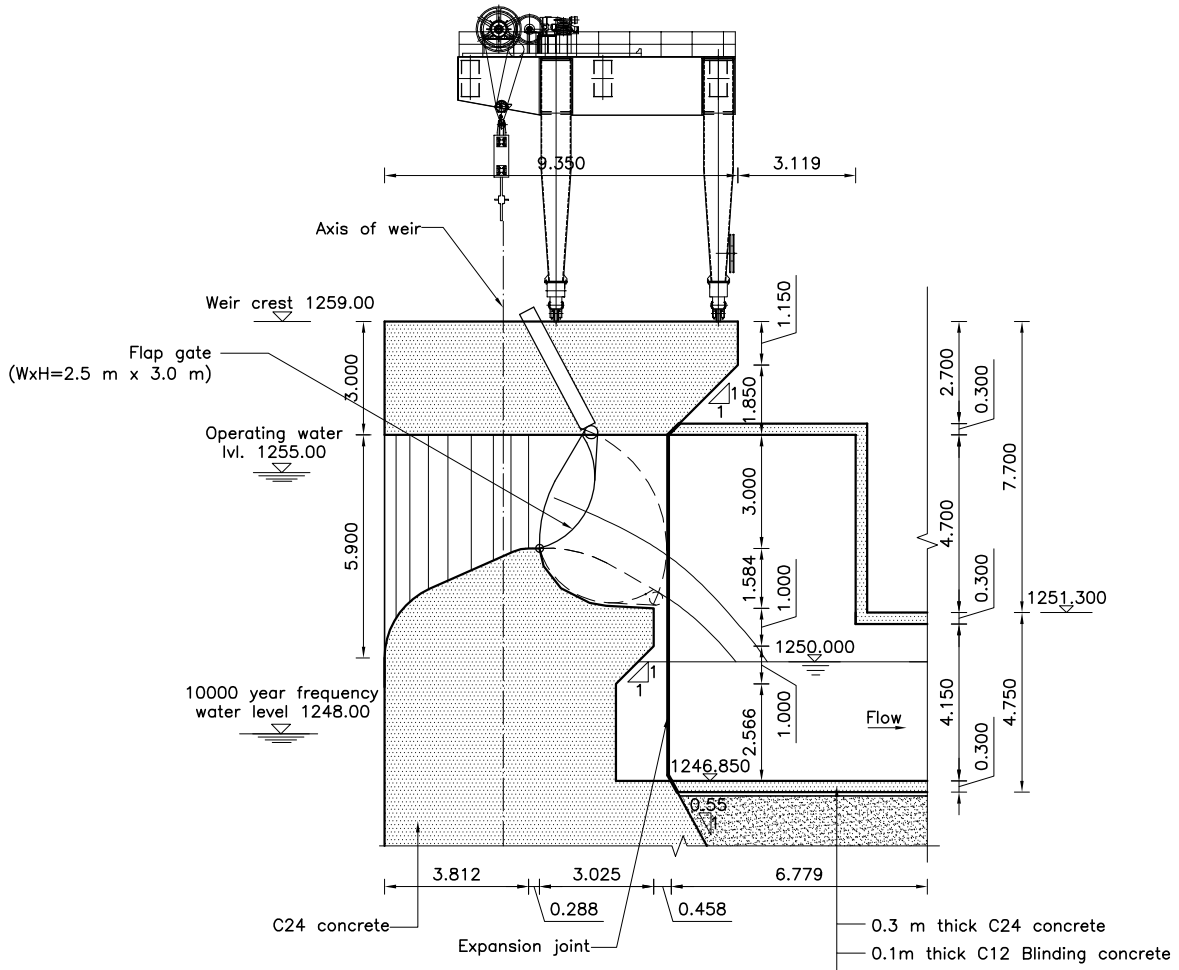
DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–13	13 OF 16	0A

A3 (297 x 420 mm)



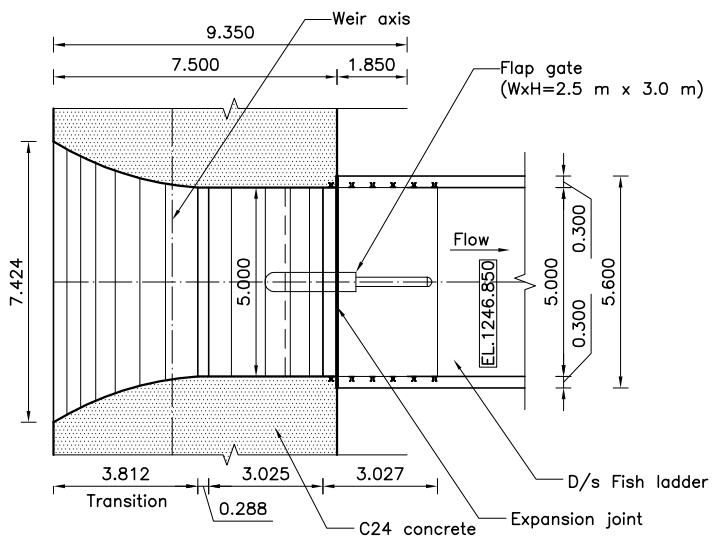
SECTION 1–1

Scale 1:500



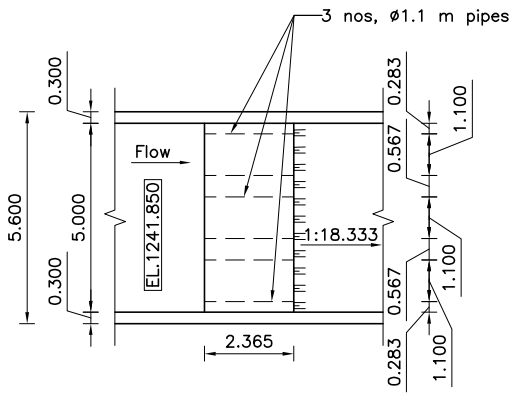
DETAIL–05

Scale 1:200



DETAIL–06

Scale 1:200



DETAIL–07

Scale 1:200

NOTE

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6. Hydro mechanical structures shown in drawing are only for reference.

m 5 0 5 10 15 20m

Scale=1:500

m 2 0 2 4 6 8 m

Scale=1:200

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
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- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/ DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

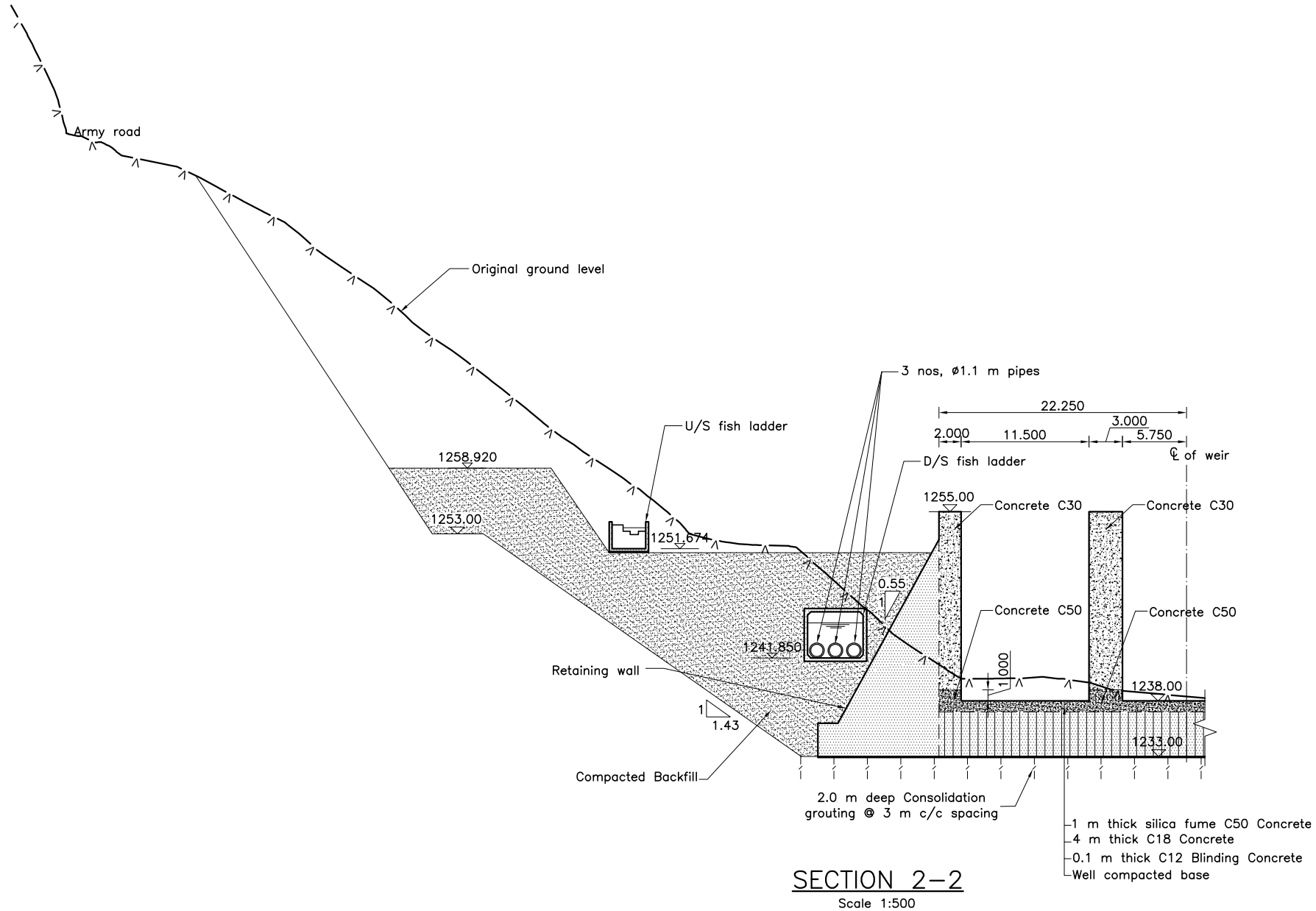
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

SECTION AND DETAILS

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–14	14 OF 16	0A

A3 (297 x 420 mm)



SECTION 2–2

Scale 1:500

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5. The access road to the weir, location of the weir control building and observation room shall be finalized after the approval of the upstream and downstream fish ladder arrangement.
6. Hydro mechanical structures shown in drawing are only for reference.

m 5 0 5 10 15 20m

Scale 1:500

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE | jade CONSULT

CONTRACTOR

DOOSAN Enerbility

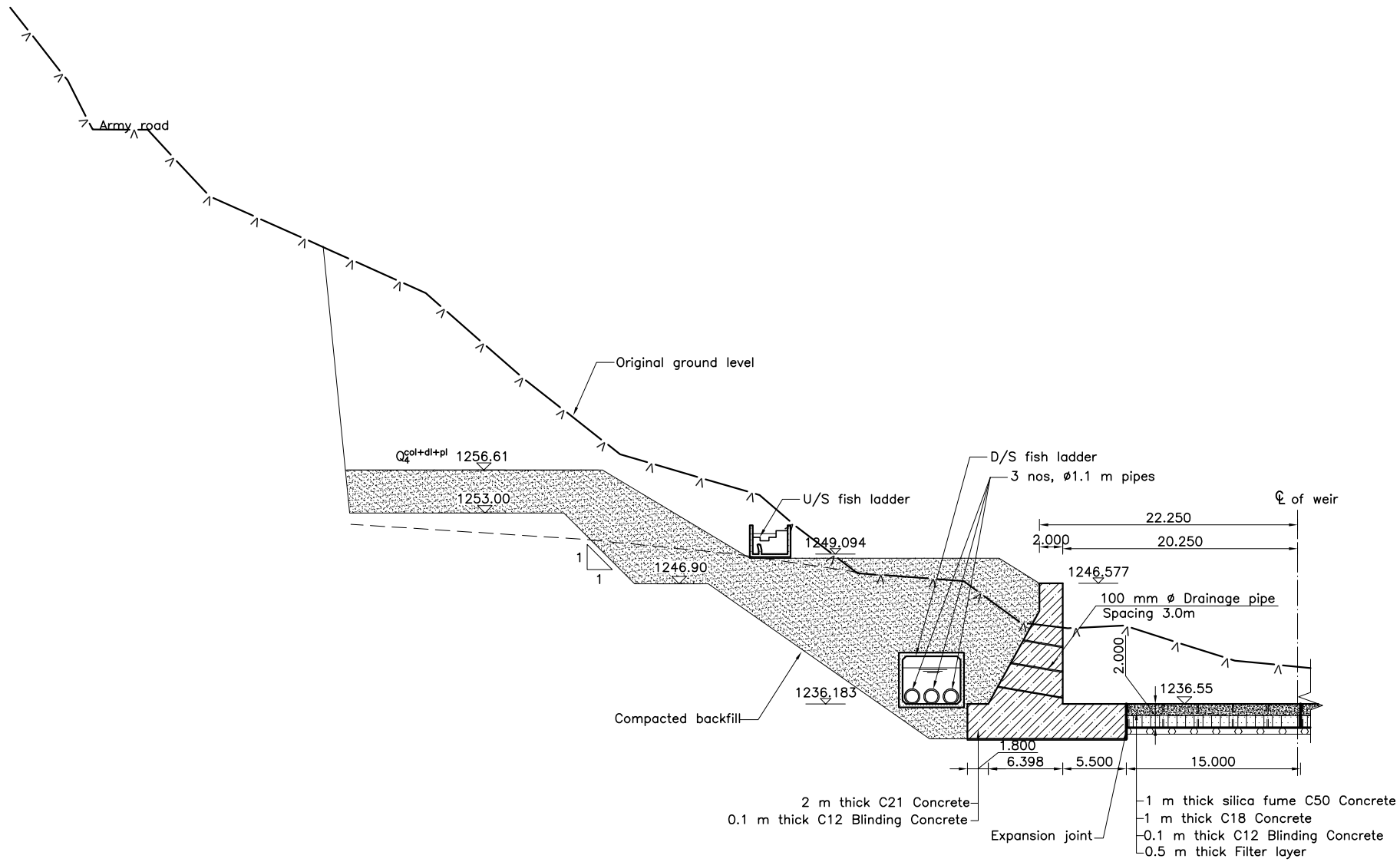
DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

SECTION

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–15	15 OF 16	0A

A3 (297 x 420 mm)



SECTION 3–3

Scale 1:500

NOTE

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6. Hydro mechanical structures shown in drawing are only for reference.

m 5 0 5 10 15 20m

Scale 1:500

REFERENCE DRAWINGS

UT1–C–020–CVL–DG–44004–0A	CONCRETE OUTLINE DRAWING OF WEIR

SYMBOL AND LEGEND

- C24/Primary Concreting
- Backfill
- C21 Concrete
- Elevation lines
- C30 Concrete
- C50 Concrete
- C18 Concrete
- Section lines

FOR INFORMATION

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
0A	07.NOV.2023	For Information	ShG/SaP/DiS/DiP	SAJAN S.	AJOY K.

PROJECT TITLE

Upper Trishuli–1 HEP (216 MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE jade CONSULT

CONTRACTOR

DOOSAN Enerbility

DRAWING TITLE

LAYOUT DRAWING OF FISH LADDER

SECTION

DRAWING NUMBER	SHEET NO.	REV. NO.
UT1–C–050–CVL–DG–49001–16	16 OF 16	0A

A3 (297 x 420 mm)